



## Feature Article

# Developing Learning Communities in Health and Human Performance

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### ABSTRACT

*Learning communities in health and human performance are creative approaches to traditional academic outcomes. Learning communities are becoming increasingly widespread in a variety of contexts, and there is extensive evidence suggesting that effective learning communities have important benefits for students as well as faculty. In this article, three successful learning communities in health and human performance are described, each of which linked two courses around a common theme. Following a general description of learning communities, the “Community Wellness,” “Lifelong Wellness,” and “Healthy Youth” communities are described in detail, and evaluative data are presented. Results of student perception surveys indicated that students were generally satisfied with the program; it promoted interaction among them; it encouraged meaningful communication between them and the instructor; it deepened their learning; and it helped them feel a sense of community. We conclude with recommendations to facilitate success and plans for future research.*

## INTRODUCTION

Learning communities consist of a variety of approaches designed to foster more explicit connections among students, between students and their teachers, and between disciplines, thereby deepening student learning.<sup>1</sup> Learning communities are becoming increasingly widespread in a variety of contexts, as a recent search in the ERIC database yielded over 17,000 hits. Research indicates that students who participate in learning communities get better grades and re-enroll in subsequent terms at higher rates compared to their peers.<sup>2</sup> Pike<sup>3</sup> found that participation resulted in significantly higher levels of involvement and interaction with faculty and peers, greater integration of information obtained in and out of class, gains in general education, and gains in intellectual development. Similarly, a learning community initiative geared toward improving

minority students' outcomes in mathematics and science was overwhelmingly successful: over the course of three years, a 75% failure rate in precalculus courses was transformed into a 75–80% pass rate. Students attributed their success to the development of strong friendship bonds, the desire and ability to engage in study teams, and much higher levels of self-confidence.<sup>4</sup> According to Smith and colleagues,<sup>5</sup> learning communities are becoming one of the most powerful interventions on the educational landscape because they provide a comprehensive, cost-effective framework for enhancing student learning that is applicable in many different types of institutions.

The broadest definition of a learning community may be “groups of people engaged in intellectual interaction for the purpose of learning.”<sup>6</sup> More specifically, learning communities purposefully restructure the

curriculum to link courses or coursework as a way for students to find greater coherence in what they are learning through increased interaction.<sup>7</sup> Typically, learning communities include collaborative and active approaches to learning, team teaching, and interdisciplinary themes.<sup>1</sup> Love and Tokuno<sup>8</sup> pose the following multiple-choice question: Learning communities are best characterized by (a) a common cohort of students taking the same classes; (b) an interdisciplinary team of faculty teaching courses with a common

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theme; (c) students forming study groups for their classes, spending time socializing outside class, and/or sharing strategies for success; (d) collaborative class activities and assignments that require students to work together and intentionally practice skills such as communication, cooperation, and/or conflict resolution; or (e) all of the above. Their point is that the "correct" answer could be any or all of these, depending on the goals of the community.

At the heart of learning communities are proliferations of engaged pedagogical practices that promote the use of active learning strategies in the classroom. Such active learning strategies consist of the use of service learning, problem-based learning, collaborative or cooperative learning, classroom assessment techniques, writing, and other activities that can be used across multiple classes to enable students to master the content.<sup>5</sup> Barkely, Cross, and Major<sup>9</sup> stated that in order to understand the learning process, we must understand the basic tenet of modern cognitive theory: learners must be actively engaged in learning.

While there are many models of learning communities from which to choose, the "paired or clustered classes" model may be best suited for developing learning communities within the health and human performance majors. In the paired or clustered classes model, two courses that typically stand alone are linked under a common theme. Faculty members plan the overall program and specific learning activities collectively, yet much of the coursework is taught independently.<sup>7</sup> Ideally, a cohort of students will take the courses together.

The purpose of this article is descriptive in nature. We begin with a general description of our university-wide learning community program, followed by detailed descriptions of three different learning communities in health and human performance.

### LEARNING COMMUNITIES AT JCSU

Johnson C. Smith University (JCSU), founded in 1867, is one of the nation's oldest historically black universities. Located in Charlotte, North Carolina, it is a co-

educational undergraduate institution that offers a liberal education in varied fields of study. JCSU currently serves approximately 1,500 talented and highly motivated students, 99% of who are enrolled full time and 85% percent of who are between the ages of 17 and 23. Currently, the student body is 99% black and yet represents a diversity of ethnic, socioeconomic, and geographical backgrounds.

JCSU began its learning community program in 1998. Since then, we have implemented a wide variety of distinct learning communities encompassing all levels and many disciplines. Currently, the largest and most extensive learning communities are the Freshman Academy Learning Community (FALC) and the Sophomore Initiative Learning Community (SILC). FALC includes all freshmen in blocks that link all liberal studies courses across two semesters. Students typically take 4 or 5 courses in the fall and spring semesters and participate in the same block the entire academic year. Similarly, SILC links two liberal studies courses each semester and involves all sophomores.

Each year, JCSU faculty members participate in faculty development training workshops and retreats that focus on the core practices and common goals of learning communities.<sup>10</sup> The interrelated core practices include community, diversity, integration, active learning, reflection, and assessment.<sup>5</sup> The goals are to increase learning, improve retention, and develop a sense of community. The University has offered incentives such as mini-grants and stipends to help motivate faculty to participate.

### LEARNING COMMUNITIES IN THE DEPARTMENT OF HEALTH AND HUMAN PERFORMANCE

Three different learning communities have been developed and implemented within the Department of Health and Human Performance: "Community Wellness," "Lifelong Wellness," and "Healthy Youth." In reference to the aforementioned multiple-choice question,<sup>8</sup> the answer for Community Wellness would be "all of the above" (a common cohort of students taking the same

classes; an interdisciplinary team of faculty teaching courses with a common theme; students forming study groups, spending time socializing outside class, and sharing strategies for success; collaborative class activities and assignments); the answer for Lifelong Wellness and Healthy Youth would be "b," "c," and "d" (an interdisciplinary team of faculty teaching courses with a common theme; students forming study groups, spending time socializing outside class, and sharing strategies for success; collaborative class activities and assignments).

Planning began with the development of a theme using a heuristic model created by Malnarich and Lardner.<sup>11</sup> Interdisciplinary faculty (health and/or physical education instructors) reviewed the content of their courses, sought alignment and commonalities, and came to consensus about a theme that linked the two courses. Once the theme was selected, faculty members collaborated and planned the overall program and specific interdisciplinary learning activities, although much of the coursework was taught independently.

In order to demonstrate curricular integration, the faculty teams used common language across course syllabi to communicate to students the common theme, goals, pedagogical strategies, cross-course (integrative) assignments and projects, and co-curricular activities included in the learning community. Faculty collaborated in the implementation phase by jointly conducting class sessions to deliver course content; jointly planning and grading assignments, tests, and co-curricular reflections; and using a website to communicate due dates and calendar information. The table in the Appendix to this article depicts a typical schedule of learning community activities appearing in the course syllabi and on the learning community website. The table shows which faculty member was responsible for arranging the date, time, location, and other logistical requirements for each activity.

The learning community courses were offered either at the same time or one after the other. The basic methodology

**Appendix. Sample Table of Learning Community Activities**

Activity	Date	Time	Location	Coordinator
<b>Physical Education Class Observation</b>	September 9th	9:00–10:00 a.m.	Merry Oaks Elementary School	Dawkins
<b>Field Trip</b>	Monday October 24th	9:00–10:00 a.m.	ImaginOn The Joe and Joan Martin Center 300 E. 7th Street	Butler
<b>Technology Instruction</b> <ul style="list-style-type: none"><li>· PowerPoint</li><li>· Internet research</li><li>· Evaluating websites</li><li>· E-mail attachments</li></ul>	Completed by September 30th	Regular class time	IBC 145 and 146	Dawkins and Butler
<b>Cross-Course Assignments</b>				
<b>Kolb's Learning Style Inventory</b> (for group identification)	Completed by September 16th	Regular class time	IBC 145 and 146	Butler and Dawkins
<b>Chat Room Topic</b> "How can we address the problem of childhood obesity?"	Started September 7th, completed by October 28th	By 5:00 p.m.	See instructions on back	Dawkins
<b>Lesson Plan Development: "Health and Physical Activity"</b> <ul style="list-style-type: none"><li>▪ "Think, Group, Share"</li><li>▪ "One-Minute Paper"</li><li>▪ Lesson plan template review</li></ul>	Joint Class Meeting October 21st	Regular class times	IBC 146	Butler and Dawkins
<b>Lesson plan form due by e-mail from Group</b> <ul style="list-style-type: none"><li>▪ Joint class meeting</li><li>▪ Redo due</li></ul>	October 28th November 4th November 11th	By 10:00 a.m.	Send to <a href="mailto:kbutler@jcsu.edu">kbutler@jcsu.edu</a> and <a href="mailto:pdawkins@jcsu.edu">pdawkins@jcsu.edu</a>	Butler and Dawkins
<b>Teach Physical Activity Lesson</b>	November 18th	9:00 a.m.	Gym Floor	Dawkins and Butler
<b>Power Point Presentation of Health Lesson</b> <ul style="list-style-type: none"><li>▪ Refreshments</li></ul>	November 21st	9:00 a.m.	IBC 146	Dawkins and Butler
<b>Assessment Activities</b>				
<b>Assignment Grades</b> <ul style="list-style-type: none"><li>▪ Lesson plan form</li><li>▪ PowerPoint or teaching</li></ul>	November 16th November 28th	9:00 a.m.	IBC 145 and 146	Dawkins and Butler
<ul style="list-style-type: none"><li>▪ Flashlight survey</li><li>▪ Focused interviews and reflections</li></ul>	November 28th	9:00 a.m.	IBC 145 and 146	Students Dawkins



used across all teams centered on the core practices of building community among students: namely, planning and implementing cross-course integrated assignments, participating in co-curricular events, engaging in active learning activities, and conducting assessments. The assessments were formative and summative in nature, conducted in the course using a variety of classroom assessment techniques (CATs). Furthermore, all communities sought student satisfactions through the administration of anonymous online surveys developed by the faculty teams.

In each learning community, the instructors developed the online survey using the Current Student Inventory (CSI) of the Flashlight Program. The CSI is a self-reporting instrument that measures attitudes of students in response to selected or constructed questions by the classroom instructors. The questions in the item bank of the CSI (almost 500) were developed by Ehrmann and Zuniga<sup>14</sup> according to Chickering and Gamson's Seven Principles of Undergraduate Learning.<sup>15</sup> The seven principles state that a good teacher encourages student-faculty contact, encourages cooperation among students, emphasizes time on task, encourages active learning, communicates high expectations, gives prompt feedback, and respects diverse talents and ways of knowing. In addition to selected items, four "universal" questions were added:

1. Indicate how strongly you agree or disagree with the following statement: The cross-course lesson plan assignment deepened my learning. (strongly agree, agree, disagree, strongly disagree)

2. Indicate how strongly you agree or disagree with the following statement: I feel a sense of community in this learning community. (strongly agree, agree, disagree, strongly disagree)

3. How many out of class activities (field trips, meetings, events, etc.) have you participated in? (one, two, three, four or more)

4. How many times did you engage in self-assessment activities in this course? (once, twice, three times, four or more times)

What follows is a detailed description of the specific methodology for each community and how we assessed students' behaviors and responses. Summative data regarding cross-course integrated assignment grades and general course grades is included.

### COMMUNITY WELLNESS

This learning community was designed to link two sophomore-level courses (Community Health and Introduction to Health Education) around the common theme of the interrelationship of community and school-based health. It was implemented during the fall 2000 semester, at which time Introduction to Health Education was offered on Mondays and Wednesdays at 2:00 p.m. and Community Health was offered at 3:00 p.m. (in the same room). Also, neither faculty member was scheduled for class at 1:00 or 4:00 p.m. in order to facilitate collaboration. The cohort group consisted of eight students who were enrolled in both classes.

The courses were deemed to be a good "fit" for a number of reasons: both are sophomore level, both are required courses for both majors (community health and school health), they are usually taken concurrently in the first semester of the major program, and they linked both health educators in the department (one with a background in community health and the other in school health education). Most important, there were many commonalities in course content. Common topics included historical perspectives, definitions and components of health and wellness, health organizations, *Healthy People 2010*, minority health disparities, health promotion skills, and program planning and evaluation.

A number of activities were incorporated. Out-of-class (co-curricular) activities included field trips to the water treatment plant, health department, and Discovery Place (a local science and health museum); a "Chat and Chow" meal with "getting to know you" activities; and a health careers panel discussion. Five cross-course activities were included. In the first combined class session, we demonstrated the course website.

The second session involved a PowerPoint presentation on needs assessment development and program planning. In the third session, students in Introduction to Health Education were paired with students in Community Health and were given the following assignment:

1. Identify a target audience and a content area of interest.
2. Develop a needs assessment proposal that would gather the necessary data for program planning.
3. Include a description of the nature of the problem, associated risk factors, need categories, sources of information, and assessment techniques.

Students were similarly paired up for the "health on the net" assignment, which involved finding a website that offers health information and evaluating the validity and reliability of the information by using a site evaluation form. Finally, students in both classes completed an online health assessment.

Assessment activities included pre- and post-course assessments; a "Think, Pair, Share" activity after the health careers presentations ("Tell us something new you learned"); the Student Instructional Report (SIR II), a standardized course and instructor evaluation tool developed by the Educational Testing Service;<sup>12</sup> an open-ended "Course Feedback" form; and an online Flashlight survey. The "Think, Pair, Share" activity is a classroom assessment and active learning technique in which the instructor poses a problem or asks an open-ended question to which there may be a variety of answers. Following "think and individual writing time," students work with a partner and share ideas, discuss, and clarify responses. They then share their ideas with another pair, or with the whole class.<sup>13</sup>

The Flashlight survey consisted of 18 questions (12 from the bank and 6 constructed). Results indicated that the learning community was very well received. Many students commented that the field trips (particularly the "Chat and Chow") were the best part of the class. All students submitted assignments on time and earned at least a

C on each. All but 2 students in the cohort earned an A in the two classes. The learning community activities provided them the opportunity to develop a greater understanding of the material and gave them the social support they needed.

### LIFELONG WELLNESS

In this learning community, a senior-level health education methods course (Methods and Materials of Teaching Health Education) was paired with a junior-level physical education methods course (Methods and Materials of Teaching Pre-K through 6th-Grade Physical Education) under the common theme of "Lifelong Wellness." It was implemented during the spring 2002 semester; at which time the health methods course was offered at 6:00 p.m. on Tuesdays and the physical education methods course was offered at 10:00 a.m. on Mondays, Wednesdays, and Fridays. There were 12 students enrolled in the health course and 28 in the physical education course. None of the students were enrolled in both classes.

These courses were selected primarily because they are both methods classes and are both required of Physical Education-Teacher Education majors. In addition, this selection linked both teacher education instructors in the department (school health education and physical education). Both courses addressed teacher education elements such as writing goals and objectives; developing lesson and unit plans; teaching methods, materials, and strategies; and evaluation and assessment techniques. Common content areas included: exercise and physical activity, fitness, nutrition, healthy living skills, minority health disparities, and practical experience.

Many of the activities involved common lessons and assignments in each class, independently of one another. For example, both classes included technology infusion lessons on PowerPoint, internet research, evaluating websites, navigating the community website, sending e-mail attachments, and participating in a chat room discussion. Also, students in both classes completed Kolb's Learning Style Inventory.<sup>16</sup> The inventory identifies

four statistically prevalent learning styles: the converger (abstract conceptualization and active experimentation), the diverger (concrete experience and reflective observation), the assimilator (abstract conceptualization and reflective observation), and the accommodator (concrete experience and active experimentation).<sup>17</sup> Results from the inventory were used to form groups for the cross-course assignments.

Cross-course interdisciplinary activities included lesson plan development, PowerPoint presentations of the lessons, a chat room discussion ("Are today's children fit or well?"), and an online course evaluation survey. In the first joint session, one student in the health course was grouped with two or three students in the physical education course in order to develop a lesson plan. Each group was randomly assigned a component of fitness (cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, body composition) or a dimension of wellness (physical, psychological, social/interpersonal, intellectual, spiritual, environmental/planetary, occupational). In the second session, the groups presented their lessons using PowerPoint and completed the online survey. Out-of-class (co-curricular) activities included a field trip to Discovery Place and participating in the chat room.

Thirty-two of the 40 students completed the online Flashlight survey. The survey developed to assess this learning community consisted of 29 questions (23 from the bank and 6 constructed) and took less than ten minutes to complete. The results indicated that students were generally satisfied with the program. In response to an objective of the learning community to promote student-to-student interaction, all respondents reported that they worked on one or more assignments and discussed the ideas and concepts in the course with other students in the courses. In terms of promoting faculty-to-student interaction, 81% (n=26) of the students reported that they discussed what they were learning in the course with the instructor one or more times. On a scale of 1 (strongly disagree) to five (strongly agree),

66% (n=21) agreed or strongly agreed that priority in the course was given to encouraging meaningful communication between the instructor and the students. Another objective was to deepen students' learning. In reference to the cross-course assignments, 93% (n=29) of the students agreed or strongly agreed that their learning was deeper. Finally, 74% (n=23) reported that they felt a sense of community.

In addition to Kolb's Learning Style Inventory and the CSI Flashlight survey, assessment activities included a "Think, Pair, Share" activity after the lesson plan group work ("Tell us what the group needs to do in order to complete the assignment"), a "One-Minute Paper" after the presentations ("Tell us what worked and what didn't"), the Fitnessgram (a fitness assessment), a wellness self-assessment, and the SIR II. The "One-Minute Paper" consists of one or two questions that students can answer quickly and briefly. Students write down their responses in one minute, then the instructor tabulates the answers and acts on the feedback.<sup>13</sup>

Again, feedback was largely positive. When criticism was given, it was thoughtful and in the spirit of making it better for the next community. All students in the health class submitted assignments on time, presented on the scheduled date, and earned at least a C on each. Only one student (9%) in the health class received an incomplete for the course; there were 3 A's (25%), 4 B's (33%), and 4 C's (33%). In the physical education course, all students submitted assignments on time and presented on the scheduled date. Twenty-three (82%) earned at least a C on the lesson plan, and all earned a C or better on the presentation. Students were graded on the PowerPoint design as well; 25 (89%) earned at least a C. Final course grades included 7 A's (25%), 11 B's (40%), 6 C's (21%), and 4 incompletes (14%).

### HEALTHY YOUTH

This learning community was very similar to the previously described Lifelong Wellness learning community. This time we



linked two junior-level education methods courses (Health Education and Physical Activity in the Elementary Schools, and Methods and Materials of Teaching Pre-K through 6th-Grade Physical Education) under the common theme of "Healthy Youth." The initiative was implemented during the fall 2003 semester. Planning ahead, we intentionally scheduled both courses at the same time (10:00 a.m. on Mondays, Wednesdays, and Fridays) in adjacent classrooms. Although no students could have been enrolled in both courses (thus, no "cohort"), this arrangement did make team teaching and joint class meetings easy to schedule. There were 19 students enrolled in the health education class and 11 enrolled in the physical education class.

The main reason these courses were selected was that both used to be required of all elementary education majors. The physical education methods course is no longer mandatory due to a change in state requirements. However, the health methods course is still required of all school health majors, and the physical education course is required of all Physical Education-Teacher Education majors. As in the Lifelong Wellness learning community, this overlap linked both teacher education instructors in the department (school health education and physical education), and both courses addressed common teacher education elements (writing goals and objectives; developing lesson and unit plans; teaching methods, materials, and strategies; evaluation and assessment techniques) and content areas (exercise and physical activity, fitness, nutrition, healthy living skills, minority health disparities, practical experience).

Again, many of the activities involved common interdisciplinary lessons and assignments in each class, independently of one another, such as the technology infusion lessons and Kolb's Learning Style Inventory. Cross-course integrated activities included lesson plan development, PowerPoint presentations of the lessons, a chat room discussion ("How can we address the problem of childhood obesity?"), and the Flashlight survey. Out-of-class (co-curricu-

lar) activities included field trips to Irwin Elementary School (to observe physical education classes) and to the University of North Carolina-Charlotte (for Dr. Steven Blair's presentation titled "Physical Inactivity: The Major Health Problem of the 21st Century").

As in the Lifelong Wellness community, one student in the physical education course was grouped with two or three students in the health education course for the interdisciplinary lesson plan assignment. Each group was assigned a section of either the Physical Activity Pyramid (activities of daily living, cardiorespiratory endurance, sports and recreational activities, flexibility training, strength training) or the Food Guide Pyramid (bread/cereal/rice/pasta group; fruit group; vegetable group; meat/poultry/fish/dry beans/eggs/nuts group; milk/yogurt/cheese group). Two joint sessions were held for lesson plan development. In the third session, the groups once again presented their lessons using PowerPoint and completed the Flashlight survey.

Twenty-eight of the 30 students (93%) completed the community's CSI Flashlight survey. This survey consisted of 19 questions (13 from the bank and 6 constructed) and took less than ten minutes to complete. Again, results indicated that students were generally satisfied with the program. All respondents reported that they worked on one or more assignments and discussed the ideas and concepts in the course with other students. In terms of promoting faculty-to-student interaction, 93% of the respondents (n=26) reported that they had discussed what they were learning in the course with the instructor. On a scale of 1 (strongly disagree) to five (strongly agree), 82% (n=23) agreed or strongly agreed that priority in the course was given to encouraging meaningful communication between the instructor and the students. In reference to the lesson plan assignment, 75% (n=21) of the respondents agreed or strongly agreed that their learning was deepened as a result. Finally, 82% (n=23) reported that they felt a sense of community.

In addition to the CSI Flashlight survey,

we again administered Kolb's Learning Style Inventory, a "Think, Pair, Share" activity after the initial lesson plan group work ("Tell us what the group needs to do in order to complete the assignment"), a "One-Minute Paper" after the presentations ("Tell us what worked and what didn't"), and the SIR II. Again, feedback was largely positive, with criticism centering on the difficulties associated with small group work. All students in the health education class submitted cross-course assignments on time, but one student did not present with her group. The aforementioned difficulties with the group lesson project were manifested in students' grades on the written part of the project, as only 68% (n=13) earned at least a C on the lesson plan, yet all but one student earned at least a C on the presentation. Final grades for the course included 7 A's (37%), 7 B's (37%), 3 C's (15%), 1 D (0.5%), and 1 F (0.5%). In the physical education course, all students submitted assignments on time and presented on the scheduled date. Again, they did much better on the presentation than the written portion of the lesson plan project. Only 6 (55%) earned at least a C on the lesson plan, but all earned a C or better on the presentation. Eight students (64%) earned a C or better in the course. There was one A (1%), five B's (45%), two C's (18%), two D's (18%), and two F's (18%).

## CONCLUSION

Developing learning communities in health and human performance are creative approaches to traditional academic outcomes. There is extensive evidence suggesting that effective learning communities have important benefits for students as well as faculty. Benefits for students include higher academic achievement, better retention rates, greater satisfaction with college life, improved quality of thinking and communicating, a better understanding of self and others, and a greater ability to bridge the gap between the academic and social worlds. Faculty benefits include diminished isolation, a shared purpose and cooperation among colleagues, increased curricular integration, a fresh approach to one's disci-



pline, and increased satisfaction with their students' learning.<sup>18</sup> Although we describe a specific program, we believe it is applicable and adaptable to any institution.

When planning a learning community, Elliot and Decker<sup>19</sup> suggest beginning with a review of the components in four broad areas: the people involved, the organizational structure within the institution, financial support, and the text and content of the learning community (e.g., the purpose, issues to be addressed, and the activities of the program). Essential elements for success include supportive and shared leadership; shared values and vision; collective learning and application of learning; supportive conditions; and shared personal practice.<sup>20</sup>

From our experience, time dedicated to brainstorming about the theme, shared content, goals/objectives, and advance planning of activities is essential. The program should be fully developed and in place before students register for classes so that the courses are identified as being part of a learning community. Once the term begins, regularly scheduled meetings will facilitate the successful implementation of the program. In order to create a larger cohort, consider developing learning communities at each level of the major program, beginning with the first courses typically taken. As students move from the freshman year to the major, they are usually enrolled in two to three courses together. This pattern tends to repeat itself throughout the junior and senior years. Finally, a comprehensive evaluation of the program will serve as the basis for refining and improving future efforts.

As we continue to implement the Healthy Youth learning community, our next step will be to conduct more in-depth statistical analyses of student outcome measures and compare them with those of students who were enrolled in the same courses but not involved in the learning community. We expect to find that students enrolled in the learning community sections scored significantly higher on exams, lesson plans, presentations, and final course grades than those enrolled in the comparison sections.

## REFERENCES

1. Gabelnick F, MacGregor J, Matthews RS, Smith BL. Resources on learning communities. *New Directions for Teaching and Learning*, 1990;41:95-102.
2. Price DV. *Learning Communities and Student Success in Postsecondary Education: A Background Paper*. New York, NY: DVP-PRAXIS Ltd. (MDRC); 2005.
3. Pike GR. *The Effects of Residential Learning Communities on Students' Educational Experiences and Learning Outcomes during the First Year of College*. Albuquerque, NM: Annual Meeting of the Association for the Study of Higher Education; 1997. ERIC Document Reproduction Service ED415828.
4. Fredericksen E. *Minority Students and the Learning Community Experience: A Cluster Experiment*. Chicago, IL: Annual Meeting of the Conference on College Composition and Communication; 1998. ERIC Document Reproduction Service ED423533.
5. Smith BL, MacGregor J, Matthews RS, Gabelnick F. *Learning Communities: Reforming Undergraduate Education*. San Francisco, CA: Jossey-Bass; 2004.
6. Cross P. Why learning communities? why now? *About Campus*. 1998;4:4-11.
7. Tinto V. Learning communities: building gateways to student success. *National Teaching and Learning Forum* [serial online]. 1998;7(4). Available at: <http://www.ntlf.com/html/lib/suppmat/74tinto.htm>. Accessed August 28, 2006.
8. Love AG, Tokuno KA. Learning community models. In: Levine JH, ed. *Learning Communities: New Structures, New Partnerships for Learning*. Columbia, SC: National Resource Center for the First-Year Experience and Students in Transition; 1999:9-17.
9. Barkely EF, Cross KP, Major CH. *Collaborative Learning Techniques: A Handbook for College Faculty*. San Francisco, CA: Jossey-Bass; 2005.
10. Dawkins PW. Faculty development opportunities and learning communities. In: Simpson N, Layne J, eds. *Student Learning Communities, Faculty Learning Communities, and Faculty Development*. Stillwater, OK: New Forums Press; 2006:53-80.
11. Malnarich G, Lardner ED. *Designing Integrated Learning for Students: A Heuristic for Teaching*. Assessment and Curriculum Design (Washington Center Occasional Paper for Improving the Quality of Undergraduate Education). Olympia, WA: Evergreen State College; 2003.
12. Educational Testing Service. *The SIRII*. Available at: <http://www.ets.org/portal/site/ets/enuitem.1488512ecfd5b8849a77b13bc3921509/vgnextoid=ff79af5e44df4010VgnVCM10000022f95190RCRD&vgnextchannel=39f1be3a864f4010VgnVCM10000022f95190RCRD>. Accessed August 30, 2006.
13. Angelo TA, Cross PK. *Classroom Assessment Techniques*. 2nd ed. San Francisco, CA: Jossey-Bass; 1993.
14. Ehrmann S, Zuniga RE. *Flashlight Handbook and Current Student Inventory*. [serial online]. 2002;6. Available at: <http://www.tltgroup.org/programs/flashcsi.html>. Accessed August 28, 2006.
15. Chickering AW, Gamson ZF. *Seven Principles for Good Practice in Undergraduate Education*. [serial online]. 1987. Available at: <http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/7princip.htm>. Accessed August 29, 2006.
16. Kolb DA. *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice-Hall; 1984.
17. Smith DM, Kolb DA. *User's Guide for the Learning-Style Inventory: A Manual for Teachers and Trainers*. Boston, MA: Hay/McBer; 1997.
18. Lenning OT, Ebbers LH. *The Powerful Potential of Learning Communities: Improving Education for the Future*. Washington, DC: George Washington University; 1999. ASHE-ERIC Higher Education Report Series, vol. 26, no. 6.
19. Elliot JL, Decker E. Gathering the fundamental resources for learning communities. In: Levine JH, ed. *Learning Communities: New Structures, New Partnerships for Learning*. Columbia, SC: National Resource Center for the First-Year Experience and Students in Transition; 1999:19-28.
20. Hipp KK, Huffman JB. *Professional Learning Communities: Assessment-Development-Effects*. Sydney, Australia: Meeting of the International Congress for School Effectiveness and Improvement; 2003. ERIC Document Reproduction Service ED482255.